

We Claim:

1. A system for enhancing visibility of distant objects in the presence of specular media, the system comprising:
 - (a) a light source including, or coupled to, a source polarization mechanism for generating polarized light that is substantially polarized at a light source polarization angle;
 - (b) an observation filter for filtering polarized light, the observation filter having a filter polarization angle of (i) substantially maximum light attenuation, or (ii) substantially minimum light attenuation; and
 - (c) a mechanism for adjusting the source polarization mechanism relative to the filter polarization angle, wherein the difference between the light source polarization angle and the filter polarization angle falls substantially within the range of 60 to 89 degrees or 91 to 120 degrees, so as to improve visual contrast between a distant object to be viewed and specular media, and wherein the distant object is situated at least two meters from the observation filter.
2. The system of claim 1 wherein the specular media comprise at least one of water droplets, ice, snow, fog, rain, sleet, hail, dust, dirt, metallic particles, and particles of sand.
3. The system of claim 2 wherein the light source polarization angle is substantially fixed, such that the mechanism for adjusting the source polarization mechanism relative to the filter polarization angle adjusts the filter polarization angle.
4. The system of claim 2 wherein the filter polarization angle is substantially

fixed, such that the mechanism that adjusts the source polarization mechanism relative to the filter polarization angle, adjusts the source polarization mechanism.

5. The system of claim 2 wherein the filter polarization angle is adjustable and the light source polarization angle is also adjustable, and the mechanism for adjusting the source polarization mechanism relative to the filter polarization angle, adjusts both the source polarization mechanism and the filter polarization angle.

6. A method for enhancing visibility in the presence of specular media, the method comprising the steps of:

(a) generating polarized light that is substantially polarized at a light source polarization angle;

(b) filtering polarized light with an observation filter having a filter polarization angle of (i) substantially maximum light attenuation, or (ii) substantially minimum light attenuation; and

(c) adjusting the source polarization angle relative to the filter polarization angle, wherein the difference between the source polarization angle and the filter polarization angle falls substantially within the range of 60 to 89 degrees or 91 to 120 degrees, so as to improve visual contrast between a distant object to be viewed and specular media, wherein the distant object is situated at least two meters from the observation filter.

7. The method of claim 6 wherein the specular media are interposing between a light source and a viewer, and the media comprise at least one of water droplets, ice, snow, fog, rain, sleet, hail, dust, dirt, metallic particles, and particles of sand.

8. The method of claim 7 wherein the light source polarization angle is substantially fixed, such that the step of adjusting the source polarization angle relative to the filter polarization angle is performed by adjusting the filter polarization angle.

9. The method of claim 7 wherein the filter polarization angle is substantially fixed, such that the step of adjusting the source polarization angle relative to the filter polarization angle is performed by adjusting the source polarization angle.

10. The method of claim 7 wherein the filter polarization angle is adjustable and the light source polarization angle is also adjustable, and the step of adjusting the source polarization angle relative to the filter polarization angle is performed by adjusting both the source polarization angle and the filter polarization angle.

11. A system for enhancing visibility in the presence of a distant glare-producing surface, the system comprising:

(a) a light source including, or coupled to, a source polarization mechanism for generating polarized light that is substantially polarized at a light source polarization angle; and

(b) a mechanism for adjusting the source polarization mechanism relative to the glare-producing surface, wherein the light source polarization angle intersects the glare-producing surface at an intersection angle substantially within the range of 60 to 89 degrees or 91 to 120 degrees so as to reduce the amount of light from the light source that is reflected by the glare-producing surface, and wherein the glare-producing surface is situated at least two meters from the mechanism for adjusting the source polarization mechanism.

12. The system of claim 11 wherein the source polarization mechanism polarizes light at an angle within approximately thirty degrees of perpendicular to the glare-producing surface.

13. The system of claim 11 wherein the glare-producing surface is at least one of: the surface of a body of water, a concrete surface, an asphalt surface, and a surface of a building.

14. A method for enhancing visibility in the presence of a distant glare-producing surface, the method comprising the steps of:

(a) generating polarized light that is substantially polarized at a light source polarization angle; and

(b) adjusting the source polarization mechanism relative to the glare-producing surface, wherein the light source polarization angle intersects the glare-producing surface at an intersection angle substantially within the range of 60 to 89 degrees or 91 to 120 degrees so as to reduce the amount of light from the light source that is reflected by the glare-producing surface, wherein the distant glare-producing surface is situated at least two meters from the source polarization mechanism.

15. The method of claim 14 wherein step (a) is performed such that the polarized light is polarized at an angle within approximately thirty degrees of perpendicular to the glare-producing surface.

16. The method of claim 14 wherein the glare-producing surface is at least one of: the surface of a body of water, a concrete surface, an asphalt surface, and a surface of a building.

17. An infrared-based system for enhancing night vision in the presence of an object that produces infrared glare, the system comprising:

(a) an infrared light source including, or coupled to, a source polarization mechanism for generating polarized light that is substantially polarized at a light source polarization angle;

(b) an observation filter for filtering polarized infrared light, the observation filter having a filter polarization angle of (i) substantially maximum infrared light attenuation, or (ii) substantially minimum infrared light attenuation; and

(c) a mechanism for adjusting the light source polarization angle relative to the filter polarization angle within the range of 60 to 89 degrees or 91 to 120 degrees, so as to improve visual contrast between a distant object to be viewed and the object that produces infrared glare, wherein the distant object is situated at least two meters from the source polarization mechanism.

18. The system of claim 17 wherein the light source polarization angle is substantially fixed, such that the mechanism for adjusting the source polarization mechanism relative to the filter polarization angle adjusts the filter polarization angle, OR wherein the filter polarization angle is substantially fixed, such that the mechanism for adjusting the source polarization mechanism relative to the filter polarization angle adjusts the source polarization mechanism, OR wherein the filter polarization angle is adjustable and the light source polarization angle is also adjustable, and the mechanism for adjusting the source polarization mechanism relative to the filter polarization angle adjusts both the source polarization mechanism and the filter polarization angle.

19. An infrared-based method for enhancing night visibility in the presence of an

object that produces infrared glare, the method comprising the steps of:

- (a) generating polarized infrared light that is substantially polarized at a light source polarization angle;
- (b) filtering polarized infrared light with an observation filter having a filter polarization angle of (i) substantially maximum infrared light attenuation, or (ii) substantially minimum infrared light attenuation; and
- (c) adjusting the source polarization angle relative to the filter polarization angle within the range of 60 to 89 or 81 to 120 degrees , so as to improve visual contrast between a distant object to be viewed and the object that produces infrared glare, wherein the distant object is situated at least one meter from the observation filter:

20. The method of claim 19 wherein the light source polarization angle is substantially fixed, such that the step of adjusting the source polarization angle relative to the filter polarization angle is performed by adjusting the filter polarization angle, OR wherein the filter polarization angle is substantially fixed, such that the step of adjusting the source polarization angle relative to the filter polarization angle is performed by adjusting the source polarization angle, OR wherein the filter polarization angle is adjustable and the light source polarization angle is also adjustable, and the step of adjusting the source polarization angle relative to the filter polarization angle is performed by adjusting both the source polarization angle and the filter polarization angle.